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INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS – FOUNDED 1966

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Dues are £5 per year payable to Mike Gee. See this issue of *Psammonalia* for details

“This newsletter is not deemed to be a valid publication for formal taxonomic purposes”

EDITORIAL

After my last Editorial, even one of my best friends accused me of pessimism. So this time I propose to avoid bio-politics and discuss a purely scientific issue.

Introduction

There is a saying in England (and maybe other countries too) that dog-owners look like their dogs. Here I will examine the hypothesis that meiobenthologists assume the morphological and behavioural characteristics of their specialist taxon, and discuss possible mechanistic theories.

The evidence

One only has to examine a petri-dish of sieved mud under the microscope to confirm this hypothesis with respect to the two most important meiobenthic taxa, the nematodes and copepods. The nematodes are long and slender, their slow and sinuous movements clearly expressing their reserved, suave and rather sophisticated character, so typical of nematologists. Some examples of the morphological characteristics of nematologists are given in Figs. 1 and 2. The epibenthic copepods, on the other hand, have a much smaller length/width ratio and charge around the dish knocking everything else aside in a manner which can be summed up as "extrovert". For obvious reasons, I have not given illustrated examples.



Fig. 1. Body form of a typical nematologist (right). For comparison, a typical kinorhynchologist (left) is illustrated to the same scale.



Fig. 2. Anterior ends of two typical nematologists. Note the tendency to carry the pointed end (nose) in a more apical position than is typical for *Homo sapiens*. (Unfortunately, the author has been unable to obtain the type specimen of this species for comparison).

Briefly, the morphological and behavioural characteristics of some other taxa are listed as follows:

Gastrotricha: Bristly, always in a hurry.

Kinorhyncha: Length/width ratio average, shy and retiring.

Turbellaria: Body form highly variable, often voracious predators (female meiobenthologists beware).

For most other taxa, the sample size is too small for generalizations to be drawn (not that I usually worry too much about that sort of thing). Tact prevents me from dealing with some of the more unsavoury meiobenthic taxa, but some meiobenthologists might be comforted by that other English saying, "it is the exception that proves the rule".

There is some evidence for subdivisions within the major taxa, for example copepodologists working

primarily on interstitial forms from sand have larger length/width ratios than those working on epibenthic forms, their behavioural characteristics being somewhat intermediate between copepodologists and nematologists.

Mechanisms

There are two possible causal mechanisms for these striking correlations:

1. Natural selection (the Darwinian view): meiobenthologists are attracted to work on a particular taxon in the first place by an initial empathy for it.
2. Acquired characteristics (the Lamarckian view): meiobenthologists acquire the characteristics of their taxon over a long period of association with it.

Hypothesis 2 can be falsified by examination of changes in the character of meiobenthologists during the course of their career. Fig. 3 illustrates a typical gastrotrichologist in the early and later stages of his career. Note the clear *reduction* in bristliness. There is also some evidence that epibenthic copepodologists have *increased* their length/width ratios during the course of their career. Both these observations are the reverse of that predicted by hypothesis 2, which is therefore clearly falsified. Hypothesis 1, natural selection, is therefore the most likely mechanism for this phenomenon.

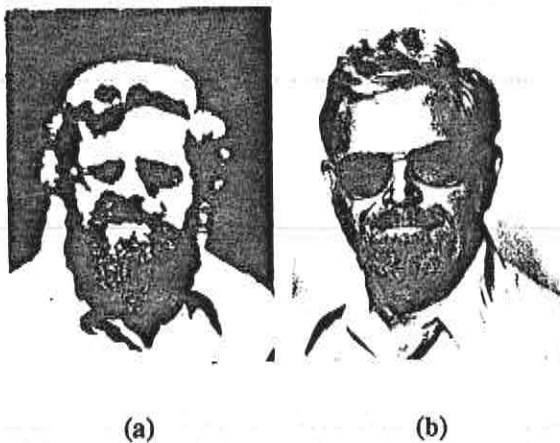


Fig. 3. A typical gastrotrichologist (a) in the early and (b) in the later stages of his career. The poor quality of Fig. 3a is due to the fact that photography had only recently been invented, but the marked decrease in bristliness between (a) and (b) can be clearly distinguished.

Richard Warwick

FEEDBACK

From Dan L. Danielopol, Limnological Institute, A-5310 Mondsee.

Basic research could redeploy credibility and interest for meiobenthic projects.

Richard Warwick's editorial (Psammonalia 87, Feb. 1990) stimulated me to write the following comments:

1- A gradual shrinkage in the funding of meiobenthos projects could be partly due to a faulty strategy used by some of us in recent years. We were too confident in the success of using meiofauna for accurate environmental monitoring. We offered too many optimistic proposals as possible successful insights into complex environmental problems. Some of these proposals were over-ambitious and could not be fulfilled within the 1-3 years commonly envisaged. The funding agencies and the environmental policy makers are certainly disappointed. We must try to offer more realistic proposals dealing with meiobenthos in the future.

2- Monitoring the benthic environment, using the meiofauna, requires a deep knowledge of the biology, origin and evolutionary capabilities of these organisms. It seems that we need fresh new information on these topics in order to advance our field of research. Instead of concentrating on monitoring projects, which are sometimes better funded than basic research, we should concentrate our efforts on the latter type of projects, a point emphasized by Richard's editorial too.

3- The study of biological diversity, with corollary fields of research such as systematics, comparative biology, evolution etc., and of the eco-physiology of meiobenthos (especially the process of adaptation to an environment that sometimes changes markedly and abruptly), could stimulate the interest of a wide audience ranging from specialists in ecology to laypersons and/or the environmental decision-makers.

4- We need an active movement of scientists who should document the evolutionary problems of meiofauna, which are as exciting as those offered by the macrofauna and megafauna.

5- The fact that local populations undergo micro-evolutionary changes implies that ecological peculiarities of each key species used for environmental research should be re-evaluated. We therefore need more people to study the ecophysiology of local populations for widely spread species which

could subsequently be used for environmental research. In my opinion, we need much more autecological information for meiobenthic organisms. 6- Finally, one should consider not only how to get funds for meiobenthic research but also the related problem of how to create and fund new jobs for those young people working in our laboratories who would like to use their creativity further within other projects dealing with meiobenthic organisms.

Mondsee. 30.3.1990

TREASURERS REPORT FOR 1989

The following is the treasurers report, submitted by Dave Thistle, for the year ending December 1989.

Initial Balance for 1989	\$4837.37
Dues and gifts	\$4114.54
Interest	\$ 202.91

TOTAL INCOME	\$9154.82
Debits	\$5174.88
BALANCE	\$3979.94

The debits include \$1000 forwarded in November to the new treasurer as working capital for the new IAM account in the UK. Therefore a more realistic balance at the end of 1989 is \$4979.94.

NEWS FROM THE MEMBERS

Several of our members receive free copies of *Psammonalia* because of currency restrictions or other difficulties. Since we get rather little feedback from these members, we have recently written to them, just to check that they are still receiving their copies. In his reply, **Sung Yun Hong** from the National Fisheries University of Pusan, Korea, writes: "I have been receiving the recent volumes of *Psammonalia*". The newsletter is very informative for my teaching of invertebrate zoology and for my research on crustacean larvae. I am interested in the larval development of the interstitial copepods." (He also sent a subscription: tardy subscribers from the Western World take note!) **Liliana Forneris** from the University of Sao Paulo circulates her *Psammonalia* to other interested people in Brazil, and hopes to organise a workshop on meiobenthos in Brazil next year.

Peter Barnett, who has now moved to the tranquility of the Isle of Cumbrae in Scotland (see Change of Address section) will be working as an honorary research associate at the University Marine Biological

Station and plans to spend a lot more time working on meiofauna.

As you will also see from the Changes of Address, **Eike Hartwig** has also moved. He writes "As well my fields of activity have changed, and are not primarily marine. The goal of the Institute (INUF), of which I am the scientific managing director, is to coordinate and control the scientific activities of the "Jordsand Society" operated sanctuaries with research in the fields of nature conservation and environment protection as requested and financed by third parties. The INUF is a non-profit institution".

Koen Martens writes "I have been working on the taxonomy and ecology of African non-marine ostracods for the past 8 years. I am working on revisions of various subfamilies (at present Cypricerinae and Cypridinae). My long(er) term aim is to publish a handbook and fauna of all non-marine African ostracods".

Zhang Zhinan has broadened his research interests considerably and is now "engaged in preparing to develop a cooperative research programme on the ecosystem in the Yellow River Estuary with my colleagues from the departments of Physical Oceanography, Chemistry, Geology and Maths" at the Shandong College of Oceanography.

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Yoshihisa has recently returned to Japan after a years sabbatical at the Smithsonian Institute in Washington. His telephone number is 03-376-1251 ext. 353, Telex is J25607, Fax is 03-375-6716 and bitnet number is SIRAYAMA@JPNORIUT.

REVISED ADDRESS LIST

In the February *Psammonalia* we indicated that we would be compiling a new address list of members for publication with this issue. However, since there are many members who have not yet paid their subscription for this year and others who have not confirmed their address, we have decided to delay publication until the August or November issue.

NEW MEMBERS

Brian Bett
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Having been a regular reader of *Psammonalia* for some eight years now, I thought it was about time I paid for the privilege. I am just completing my PhD thesis on "The impact of organic enrichment on the ecology of marine meiofauna, particularly nematodes". This work involved a temporal and spatial study of the meiofauna at the higher taxa level, and nematodes at the species level, around a sewage sludge dump site on the west coast of Scotland. I have recently taken up a post with IOS, joining their benthic biology research team. Our major efforts are directed towards characterising the benthic communities from two abyssal plain locations in the eastern North Atlantic Ocean. Together with our collaborators we hope to examine the full size spectrum of the benthos, including those less interesting groups that are larger and smaller than the meiofauna. The two study sites were selected on the basis of major differences in the primary productivity of the surface

waters which we believe may be reflected in benthic community structure and seasonality.

Chris Hakenkamp
Department of Zoology
University of Maryland
College Park
Maryland 20742
USA

I am presently investigating the relationship between dissolved organic carbon, bacteria and meiofauna in groundwater systems near Chesapeake Bay, Maryland.

Emil Olafsson
Department of Zoology
University of Stockholm
S-106 91 Stockholm
SWEDEN

My PhD programme, finished last summer and supervised by Dr. Colin Moore, was on the control of meiobenthic community structure by macrofauna in a subtidal muddy habitat on the west coast of Scotland. Currently I am working with Prof. Ragnar Elmgren on meiofauna from soft subtidal sediments near Askö laboratory field station in the Baltic. By using a laboratory approach I am evaluating the effects of biological disturbance on the nematode and copepod assemblages.

Santiago Villora
Department de Biologia Animal
Universitat de Valencia
Dr. Moliner 50
46100 - Burjassot (Valencia)
SPAIN

At present I am studying the ecology of sandy beach meiobenthos in the Gulf of Valencia (western Mediterranean).

FATE OF LONDON'S NATURAL HISTORY MUSEUM

On Monday 23rd April, London's world famous Natural History Museum announced that 46 scientific posts will be cut from the current staff of 299. The majority of the cuts will be made by compulsory early retirement and redundancy. The Museum is losing research expertise in many areas, including Recent and fossil mammals, testate amoebae, sponges, diatoms, bryophytes, marine algae, fossil plants, fossil birds, Tertiary molluscs, bees and wasps, Hemiptera (Heteroptera), weevils, insect sounds, parasitic worm databases, histology, building and decorative stones,

gemstones and taxonomic computing. This is in addition to research already terminated recently on modern birds and spiders, coelenterates, bryozoans, echinoderms and annelids.

Additionally, there will be a revolutionary restructuring of the Museum's scientific activities and the terms of employment for the remaining staff. *There is deep concern for the future of taxonomy at the Museum and its contribution to the scientific community, both national and international.* This is reflected in the overwhelming outcry in the press, including a severely critical editorial in Nature.

The problem stems from a lack of Government funding, which for several years has failed to keep pace with inflation. Thus, without a change of policy, the recently announced cuts may well be repeated in a few years time. In the meantime, the Museum is attempting to raise funds from sponsorship and short-term, contract-based work, with less emphasis on the fundamental taxonomic research through which the Museum has established its international reputation. The long-term impact of such asset-stripping exercises could be disastrous. It threatens their strategic importance in the taxonomic community.

Within the restructuring exercise, people who have built up expertise in certain areas have been told to change their work completely. Another equally sad aspect concerns the fact that most of the staff that remain are to be held at fixed grades, giving no opportunity for promotion without a complete change of job. This has had the effect of demoralising staff. Curators will be denied the opportunity to develop scientific expertise or a depth of knowledge of the material in their care. Thus they will be unable to provide the current standard of constructive support to visiting specialists.

The only chance of halting this tragic loss of taxonomic expertise seems to be direct appeals for proper funding. The staff of the Natural History Museum would welcome your support. Letters of protest will show the strength of the views of colleagues in other institutions. Please address letters to:

The Rt Hon Richard Luce MP,
Minister for Arts,
Office of Arts and Libraries,
Horse Guards Road,
London SW1P 3AL
and/or
Walter Bodmer FRS,
Chairman of Trustees,

The Natural History Museum
Cromwell Road, London SW7 5BD
with copies to
Dr Neil Chalmers,
The Director,
The Natural History Museum,
Cromwell Road,
London SW7 5BD

GERLACH'S NEMATODE LIBRARY FOR SALE

40 years ago when I started work on marine nematodes, xerocopy was not invented. I made hand written copies or used my camera to copy pages from periodicals in libraries. But first of all I could rely on original reprints, via exchange with the authors or through the second hand book market which at that time covered reprints too, because it payed out to purchase, catalogue and sell them. Wherever I found a nematode paper advertized I bought it. 3-5 cm piles of papers of the same size were cloth bound. Reference was made in a card file as to which paper could be found in which volume. In 1963 I had the chance to buy the library of terrestrial and freshwater nematode papers which Arwed H. Meyl had assembled since the beginning of the fifties. Due to these purchases I collected not only most reprints of my contemporary colleagues, but could include valuable publications from the early decades of nematology, like Bastian, Buetschli, De Man, Cobb and others who worked with a drawing and printing technique not easy to reproduce with modern xerocopies. A couple of textbooks is included in the collection, for example the second edition of Chitwood.

By now the nematode library consists of about 160 mostly cloth bound volumes (filling 480 cm shelves), plus 20 files with xerocopies. The set is nearly complete with regard to bibliographic entries listed in the 1973/1974 aquatic nematode checklist. By now the library should contain more than 1500 titles, listed in a card file of about 100 cm length.

Approaching retirement I am going to organise my future activities. Should I make a new start in nematology? My last publications in this field are from 1977 (with the help of Preben Jensen) and from 1979 (with the help of Marion Schrage and Franz Riemann). In fact I did not increase my expertise in this field of science after writing the checklist. So I would have to work myself through the past 15 years of nematode bibliography. But eyes are not getting better with age, and I am not going to learn the Russian language.

Therefore I will not sit again behind the microscope. I prefer to dedicate my emeritus interests to paper work, for example a synopsis of Kieler Bucht ecology.

My nematode library is for sale. I ask anybody interested in achieving the library to contact me. The price is open. With preference I will sell it to a laboratory which credibly promises to work with it for some decades, so that my library could help to promote progress in the science of aquatic nematology.

Prof. Dr. Sebastian A. Gerlach, Institut fuer Meereskunde, Duesternbrooker Weg 20, D 2300 Kiel, Federal Republic of Germany.

REPORTS OF MEETINGS

BENTHIC ECOLOGY MEETING, MOBILE, ALABAMA, USA – March 30th–April 1st, 1990.

This meeting was well attended by meiobenthologists who enjoyed the warm temperatures and fine seafood cuisine indigenous to the Gulf of Mexico region. I list here the authors and titles of papers that I know of that dealt with meiofauna.

Carman, K.R., Thistle, D., Foy, M. & Ertman, S. Nile red as a probe for examining lipid-storage products in benthic copepods.

Chandler, G.T. & Williams-Howze, J. *Diarthrodes aegideus* – A striking example of ontogenetic shifts in a meiobenthic organism's functional effects on sediments.

Decker, C.J. Mechanisms of food selection by a species of benthic copepod.

Eckman, J.E. Response of deep-sea harpacticoids to flow about a biogenic structure.

Fleeger, J.W. & Rabalais, N.N. Benthic communities of a Mississippi River influenced continental shelf.

Koepfler, E. & Montagna, P. Benthic bacterial production and trophic interactions in a southern Texas estuary.

Kurdziel, J.P. & Bell, S.S. Colonization of seagrass patches by harpacticoid copepods: is emergence coupled with invasion of new areas?

Lopez, G. & Decho, A. Digestion of microbes and microbial exudates by *Streblospio benedicti*

Meyer, H.A. & Bell, S.S. Synchrony of marine benthos on a regional scale: studies with the harpacticoid copepod *Metis holothuriae*.

Montagna, P.E., Koepfler, E. & Blanchard, G. On the measurement of meiofaunal grazing rates in estuarine sediments.

Tweddale, W.A. & Bell, S.S. Comparison of size spectra of copepods in subtropical seagrass communities.

Webb, D.G. The effect of predation by juvenile Pacific salmon on harpacticoid copepods: a population dynamics and experimental study.

John Fleeger

(Does their inordinate fondness for harpacticoid copepods [eight out of twelve papers!] tell us anything about the American nation? – Ed.)

FUTURE MEETINGS

SIXTH INTERNATIONAL SYMPOSIUM ON AQUATIC NEMATODES, YERSEKE, THE NETHERLANDS

This meeting has been slightly curtailed, please note the revised dates which are now 8–10th August, 1990. Further information can be obtained from:

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Yerseke, The Netherlands

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SOCIAL COLUMN

We were sorry to hear that Krystyna Prejs from the University of Warsaw is ill in hospital, and we wish her a speedy recovery.

We were shocked by the tragic news that Tatsunori Ito of the Seto Marine Biological Laboratory, Kyoto University, committed suicide on 9 May. This is a terrible loss for our Association as well as for the Systematic Society, Zoological Society and Benthic Society of Japan. We hope to publish an appreciation of his work in the next issue of *Psammonalia*.

LITERATURE CITATIONS

We have received a letter from Hjalmar Thiel, pointing out, quite correctly, that many typographic errors appear in the German literature citations in *Psammonalia*, the prominent one being the missing out of umlauts. Hjalmar has kindly offered to provide a proof reading service for the German literature. However, this would only be a partial solution to the general problem, since we would have equal difficulties with many other languages including French, Spanish and the Scandinavian languages. Some members of the Board of Correspondents send their citations via electronic mail (e.g. BITNET) as ASCII files, which saves us a lot of retyping, but these citations inevitably have no accents, species names not

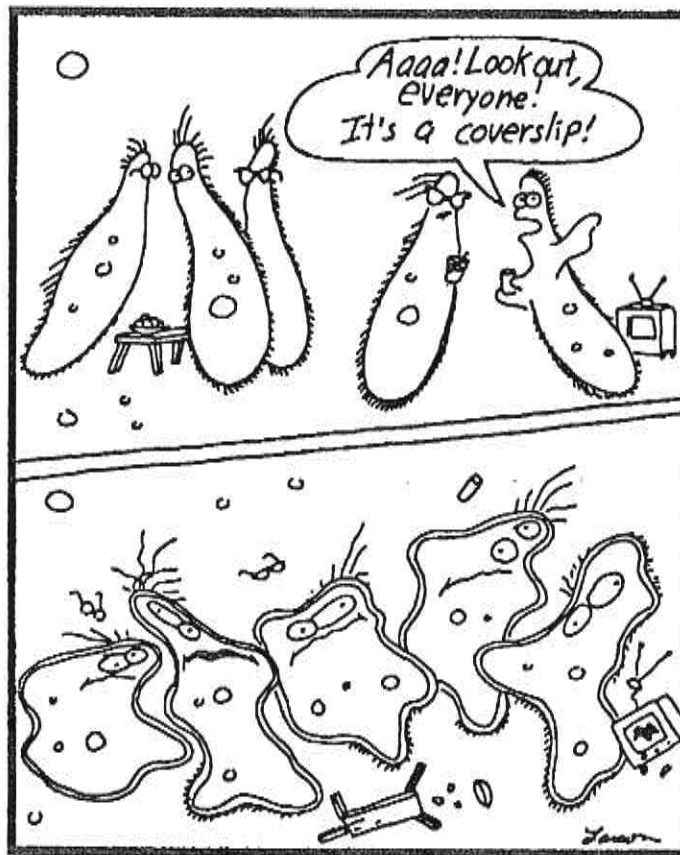
underlined or italicised etc. It would be beyond the capabilities of the Editorial Board to check out each reference from its original source, as much of the literature is simply not available in Plymouth, particularly that sent by our Russian, Chinese and South American correspondents. Also, such an exercise would inevitably slow down the process of producing our current literature citations, the aim of which is to be as up to date as possible and to alert the readership to publications long before they will appear in the normal abstracting journals. So, in consultation with all members of the Executive Committee, we have decided not to take up Hjalmar's generous offer.

Please remember, therefore, that *Psammonalia* is not a scientific journal, and while we try to avoid errors as much as humanly possible we should not (as Marc

Bergmans put it) sacrifice our newsletter's expediency and informality to the pursuit of elusive perfection. I need hardly point out that no reference not seen by the author should ever be cited in a publication, and the original should always be checked for accuracy. *Psammonalia* is an indicator of work produced, and not a *bona fide* Bibliography.

John Fleeger has also asked me to point that he has all of the 1989 *Psammonalia* literature ("complete with many misspellings in multiple languages") that he will be glad to distribute by BITNET (ZOFLEE@LSUVM) or on a diskette in an ASCII file or Word Perfect format. There is no charge for the diskette. You can also get a diskette from Plymouth, but you will have to pay for it!

Richard Warwick



The soft meiofauna have a domestic crisis. (with apologies to Gary Larson)

CURRENT LITERATURE

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